

AMENDMENTS TO THE SPECIFICATION

- Please replace paragraph 25, which starts on page 8 at line 23 with the following replacement paragraph:

Figure 2 illustrates a block diagram of the present invention with emphasis on the various embodiments of the sensors **14**. The sensors **14** each include a communication interface **32**, a transceiver **34**, a DC power source **36**, and an activity measuring device **38**. There are two general types of sensors **14** used in the present invention. First are the wired sensors **14A, 14B, 14C, 14D**. In each of the wired sensors **14A, 14B, 14C, 14D**, the communication interface **32** is a transformer physically coupled to the wire **12**. Next ~~are~~ is the mobile ~~14E, 14F~~ sensor 14D, which ~~operate~~ operates without actual physical connection to the wire **12**. The communication interface **32** of the mobile ~~sensors 14E, 14F~~ sensor 14D is a single-turn, inductive antenna placed near, but not directly over, the wire **12** and oriented in a substantially vertical orientation with respect to the wire **12**, thereby creating a mutual inductive coupling allowing bidirectional communication. In the illustrated embodiment, a variety of DC power sources **36** are shown. First is a power conditioning in-line zener diode **36A** connected to wire **12** for generating a DC voltage drop used to power the sensor **34**. Next is a DC transformer **36B** for converting the AC voltage traveling through wire **12** into a DC voltage. Finally, an independent power source **36C, 36D** is shown. The independent power source **36C, 36D** can be a battery or a solar cell. One skilled in the art will recognize that the independent power source **36D** provides the greatest benefit when used in a mobile sensor **14D** such that it can be readily moved without the need for connection to an external power source.